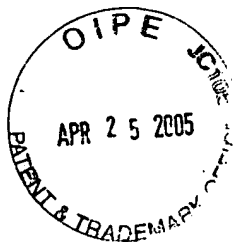


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DEVICE FOR HOLDING DISHWASHING CLEANSERS IN THE FORM OF  
COMPRESSED POWDER BLOCKS IN HOUSEHOLD DISHWASHING MACHINES

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A device for holding dishwashing cleansers in the form of compressed powder blocks in household dishwashing machines will provide a solution which makes it possible for the cleaning powder blocks to be held inside the machine.

This will be achieved by the design of the device as a dosing container (1) which can be attached inside the dishwashing machine and which has at least one dosage chamber (2) to hold the cleaning powder block with at least partially perforated sides (3) and/or bottom surfaces (4).

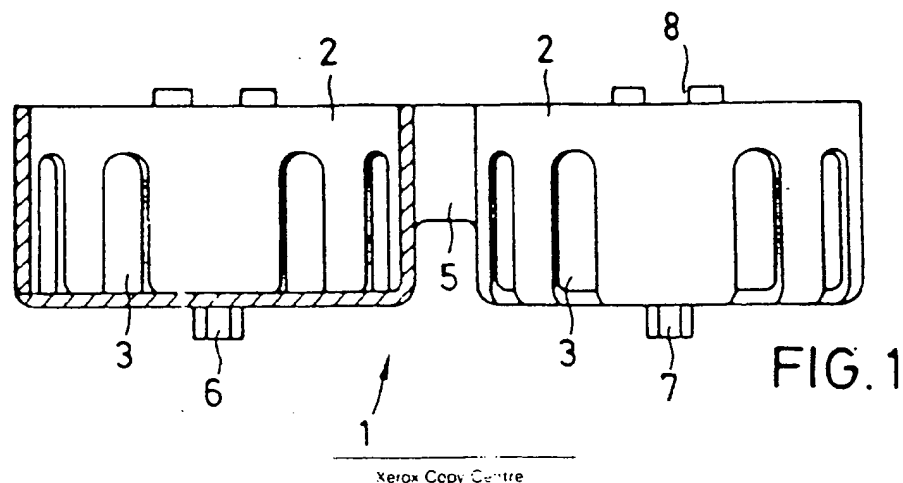


Figure 1

The invention concerns a device for holding dishwashing cleansers in the form of compressed powder blocks in household dishwashing machines.

In addition to commonly used dishwashing cleansers in powder form for household dishwashers, so-called compressed powder blocks are becoming more and more common. Improved cleaning product performance can be obtained with the aid of these cleaning powder blocks. Particularly effective is a pressed cleaning powder blocks in the form of a two-layered compact. This type of compact is suitable for use in a two-stage washing process. The first layer is dissolved in the prewash and the second layer is not dissolved until later during the main wash.

This type of pressed cleaning powder block is currently placed, before the wash cycle, in the dosing compartment of the dishwashing machine which is actually intended for powdered cleansers. With this type of placement of the cleaning powder

block, however, its dissolution is not a well-defined process; in particular, a dissolution in several phases, adapted to each phase of the wash cycle, cannot be assured, which leads to unsatisfactory cleaning results. This is because the compressed cleaning powder block in the dosing compartment does not come into sufficient contact with the washwater and/or the cleaning powder block is washed out of the dosing compartment by the washwater and falls onto the floor of the dishwashing machine, preventing the complete dissolution of the cleaning powder block and any even and predictable distribution of the cleaning product throughout the machine.

The goal of the invention is the creation of a solution which assures complete and predeterminable dissolution of compressed cleaning powder blocks, particularly of multiple-phase cleaning powder blocks, during the wash cycle in a dishwashing machine, without harming the contents of the machine.

This goal is achieved according to the invention with a device of the type described above in that the device is designed as a dosing container which can be attached inside the dishwashing machine and which has at least one dosage chamber to hold the cleaning powder block with at least partially perforated sides and/or bottom surfaces.

This device can be attached inside the machine, to the silverware basket, for example. A sufficient amount of water can penetrate the perforated sides and/or bottom of the dosage chamber to effect the complete dissolution of the inserted compressed cleaning powder block. Damage to the contents of the dishwashing machine, in particular the silverware, through too high a concentration of cleanser is avoided by the way in which

the device according to the invention with the compressed cleaning powder block is attached, since a precisely definable dissolution at a sufficient distance from the contents of the dishwashing machine with subsequent dilution by the washwater is assured.

In detail, the invention prescribes that the dosing container will have at least one hanger for its attachment to the silverware basket or other parts of the dishwashing machine. The hangers allow the simple attachment of the device according to the invention to the inside of the dishwashing machine. It is further prescribed that there will be a protrusion at the lower end of the hanger for securing the dosing container. This bulge at the lower end of the hanger assures a secure attachment of the device in the dishwashing machine.

In the arrangement of further detail, the invention prescribes that the dosage chamber consists of a basket with perforations on the sides and the bottom. A cylindric basket results in a particularly good fit to the cylindrical shape of most compressed cleaning powder blocks; thus, a cylindrical basket is particularly suitable.

For a particularly advantageous arrangement the invention prescribes that the dosing container will consist of at least two dosage chambers attached to one another by connecting bars. Through the connection of the dosage chambers by one or more connecting bars, the dosing container is of a single piece and can be manufactured by injection molding as a single unit and is furthermore particularly securely fastenable to the inside of the machine.

The invention furthermore prescribes that the ratio of the height of the dosage chamber to the height of the compressed cleaning powder block will be in the range of 1:1.4. This ratio has performed particularly well in applied technical experiments.

The invention is more closely described in the following as shown in the illustration for example. The illustration shows in:

Figure 1 schematic front view of an example of an embodiment of the invention with two dosage chambers, in

Figure 2 top view of the same example and in

Figure 3 side view of the same example.

A dosing container 1 exhibits two basket-shaped dosage chambers 2 with side perforations 3 and bottom perforations 4.

The dosage chambers 2 are connected to one another by a connecting piece 5. Hangers 6 and 7 for attaching the dosing container 1 to a silverware basket not shown in the illustration, or something similar, of the dishwashing machine are equipped with a gap 8 and a bulge 9 along their lengths.

The mode of operation of the invention is as follows: The dosing container 1 is attached by means of the hangers 6 and 7 to the outside of the silverware basket of a dishwashing machine. A tablet-shaped compressed powder block made of dishwashing [detergent] granules not shown in the illustration is inserted into each of the two dosage chambers 2. During the wash cycle, water can penetrate the dosage chambers 2 through the side perforations 3 and the bottom perforations 4. In this way the inserted compressed cleaning powder blocks are dissolved easily or, when using two-phase tablets, in consecutive stages. The silverware in the silverware basket is far enough away from the

compressed cleaning powder blocks so that too high a concentration of cleanser, which could harm parts of the silverware, cannot occur in the nearby area. Of course, the dosing container can also be attached at another location inside the dishwashing machine.

The invention is not limited to the example of the embodiment shown in the illustration. In particular, it is also possible to have more than two dosage chambers. Furthermore, a noncylindrical dosage chamber shape can be useful in adapting to other tablet shapes.

#### Claims

1. Device for holding dishwashing cleansers in the form of compressed powder blocks in household dishwashing machines characterized by the fact that it is designed as a dosing container (1) which can be affixed to the interior of the dishwashing machine and which has at least one dosage chamber (2) to hold the cleaning powder block with at least partially perforated sides (3) and/or bottom surfaces (4).

2. Device as in Claim 1, characterized by the fact that the dosing container (1) will have at least one hanger (6) for its attachment to the silverware basket or other parts of the dishwashing machine.

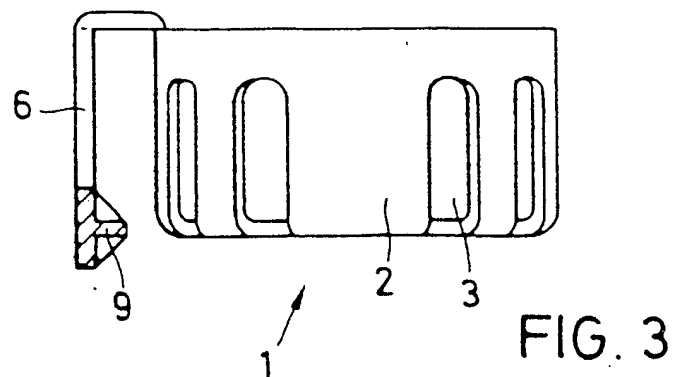
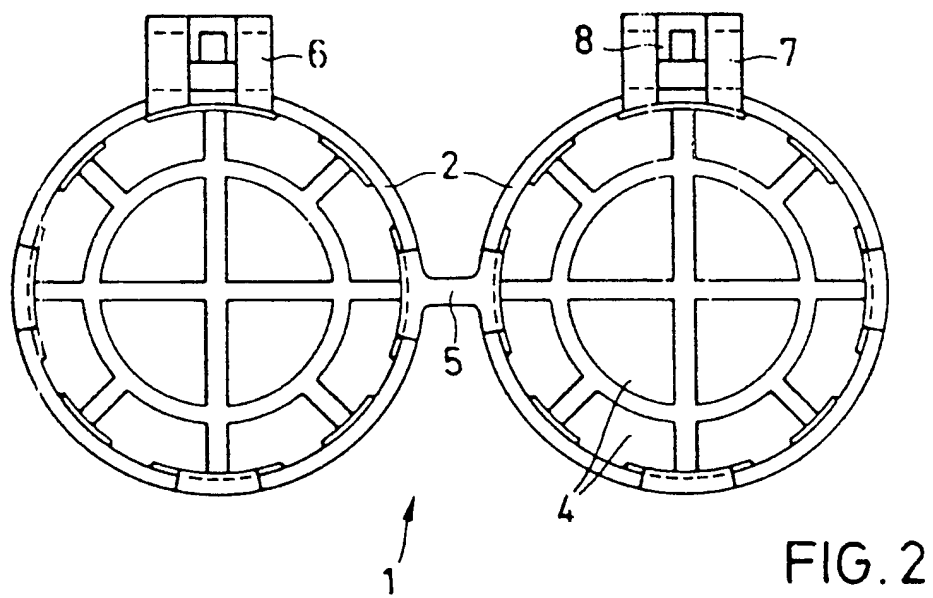
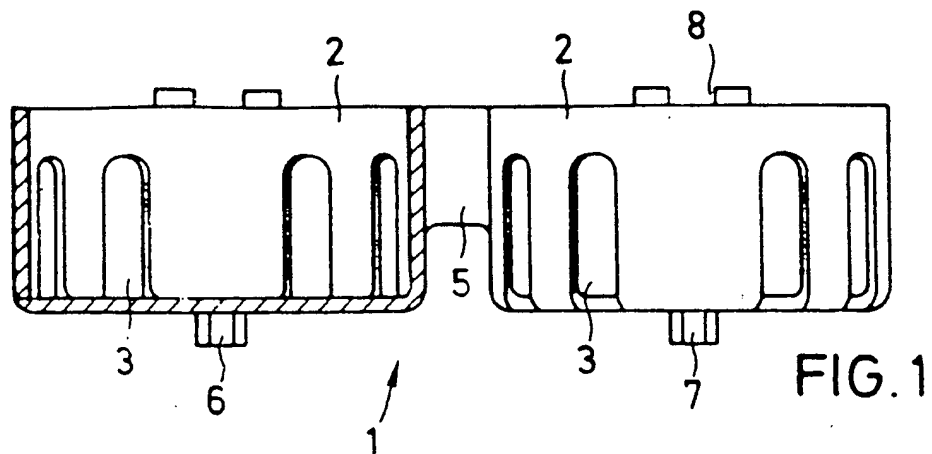
3. Device as in Claim 2, characterized by the fact that there will be a protrusion (9) at the lower end of the hanger for securing the dosing container.



4. Device as in one of the preceding claims, characterized by the fact that the dosage chamber (2) consists of a basket with perforations on the sides (3) and the bottom (4).

5. Device as in one of the preceding claims, characterized by the fact that the dosing container (1) will consist of at least two dosage chambers (2) attached to one another by connecting pieces (5).

6. Device as in one of the preceding claims, characterized by the fact that the ratio of the height of the dosage chamber to the height of the compressed cleaning powder block will be in the 1:1.4 range.



European Search Report

\* in total \*

\* in total \*

\* Figures 2, 3 \*

\* Figures 1-5 \*

The Hague

October 26, 1988

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